

IN THE CLAIMS

1. through 38. (Canceled)

39. (Currently amended) A semiconductor substrate including a plurality of photodetectors, each photodetector of the plurality having an active area on a first surface of the substrate and a further active area on the side of a second surface of the substrate, wherein each photodetector of the plurality is provided with an adjacent conductive via electrically isolated from the substrate, from the first surface of the substrate to the second surface of the substrate, for connecting the active area to the second surface of the substrate, wherein the conductive vias comprise polysilicon, formed on the inner walls of the vias, the second surface providing electrical connections for the active areas and the further active areas of the plurality of photodetectors and wherein there is provided a further conductive element from the side of the first surface of the substrate to the side of the second surface within at least one of the conductive vias, said further conductive element being electrically isolated from the polysilicon of the conductive via within which said further conductive element is contained.

40. (Canceled)

41. (Previously presented) A substrate according to claim 39, wherein there is provided a further conductive element connected between the active area of at least one of the photodetectors and the respective conductive via.

42. (Previously presented) A substrate according to claim 39, wherein there is provided a further conductive element on the side of the second surface of the substrate connected to at least one of the conductive vias.

43. (Previously presented) A substrate according to claim 42, wherein the further conductive element on the side of the second surface of the substrate is for making an off-chip connection to the conductive via.

44. (Previously presented) A substrate according to claim 39, wherein the photodetectors are photodiodes.

45. (Previously presented) A substrate according to claim 44, wherein the active areas on the first surface of the substrate are anodes.

46. (Previously presented) A substrate according to claim 44, wherein the further active areas are cathodes.

47. (Previously presented) A substrate according to claim 39, wherein the further active areas are formed as a layer on the second surface.

48. (Previously presented) A substrate according to claim 39, wherein the photodetectors are photodiodes of at least one of the following: an imaging system, a medical imaging system, and a computed tomography system.

49. (Previously presented) A substrate according to claim 39, wherein the plurality of photodetectors forms an array of photodetectors.

50. (Previously presented) A substrate according to claim 49, wherein the array of photodetectors extends in two directions.

51. (Previously presented) A substrate according to claim 49, wherein the array of photodetectors is arranged into a plurality of sub-arrays of photodetectors.

52. through 73. (Canceled)

74. (Currently amended) A semiconductor substrate including a plurality of photodetectors, each photodetector of the plurality having an active area on a first surface of the substrate and a further active area on the side of a second surface of the substrate, wherein each photodetector of the plurality is provided with an adjacent conductive via electrically isolated

from the substrate, said via extending from the first surface of the substrate to the second surface of the substrate and connecting the active area to the second surface of the substrate, wherein the conductive vias comprise polysilicon, formed on the inner walls of the vias, and wherein there is provided a further conductive element comprising an additional electrically isolated via from the side of the first surface of the substrate to the side of the second surface within at least one of the conductive vias, said further conductive element being electrically isolated from the polysilicon of the conductive via within which said further conductive element is contained, and further wherein there is provided a guard ring structure for each photodetector formed at the first surface of the substrate, the additionally electrically isolated via connecting the guard ring to the second surface of the substrate, the second surface providing electrical connections for the active areas, the further active areas, and the guard rings of the plurality of photodetectors.